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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,791	07/18/2003	Christopher Lambert	SWIN 2772	3503

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EXAMINER

KINNEY, ANNA L

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/622,791

Applicant(s)

LAMBERT, CHRISTOPHER

Examiner

Anna Kinney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/10/03.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A composition comprising peracetic acid and hydrogen peroxide, a suspension comprising the composition and cellulose fibre, and a process for preparing the suspension.

The use of the trademark Tinopal has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology. The Examiner suggests that Millcide PH120 may also be a trademark.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 10, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "sufficient relative concentration" in claim 1 is a relative term which renders the claim indefinite. The term "sufficient relative concentration" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite

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degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore, the concentrations of peroxyacetic or peracetic acid and hydrogen peroxide are indefinite. The Examiner notes that peroxyacetic acid and peracetic acid refer to the same compound. See The Condensed Chemical Dictionary, p. 786 (Hawley, Gessner, The Condensed Chemical Dictionary, Tenth Ed., Van Nostrand Reinhold Company, 1981.) Furthermore, "the necessary proportion of fluorescent whiting agent or optical brightening agent" has not been established in the claim.

Claims 5 and 10 contain percentages of peroxyacetic acid and hydrogen peroxide, but does not identify whether these are weight- or volume-based percentages. Therefore, the amounts of peroxyacetic acid and hydrogen peroxide are indefinite. Claim 13 contains a similarly indefinite peroxyacetic acid limitation.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Devenyns (U.S. Patent 5,552,018).

With respect to claim 1, Devenyns discloses a composition for cellulose suspensions, the composition comprising peracetic acid and hydrogen peroxide (col. 2, line 59-65), containing at least 10% by weight of peroxyacid and at least 1.5% by weight

of hydrogen peroxide, with 5% hydrogen peroxide given as a specific example (col. 2, lines 53-65). Devenyns further discloses adding additional hydrogen peroxide with an alkali to the composition after contact with the pulp (col. 5, lines 30-40). In the absence of evidence to the contrary, the Examiner considers these ranges to be sufficient relative concentrations to reduce the necessary proportion of fluorescent whiting agent (FWA) or optical brightening agent (OBA) required to achieve the desired brightness in finished paper or paper board products formed from the cellulose suspension.

With respect to claim 2, Devenyns discloses at least 10% by weight of peracetic acid, including a specific point of 34% by weight of peracetic acid (col. 2, lines 53-65), which is within the claimed range of at least 12.5 weight percent peracetic acid.

With respect to claim 3, Devenyns discloses adding cationic materials (e.g., stabilizers, col. 3, line 54 – col. 4, line 13) to prevent considerable degradation of the cellulose chains (col. 1, lines 34-36), which the Examiner considers facilitates reaction of the peracetic acid with cellulose fibres.

With respect to claim 4, Devenyns discloses that the cationic material is added to the composition in quantities of at least 0.05% by weight and not exceeding 3% by weight relative to the solids content (col. 3, line 66 – col. 4, line 6). In absence of evidence to the contrary, the Examiner considers this to provide one specific point within the claimed range of 1-20% by volume. The Examiner further notes that Devenyns discloses using the peracetic acid as an ammonium, alkali metal, or alkaline-earth metal salt (e.g., peroxyacid; col. 3, lines 5-8), which the Examiner construes would provide cations upon dissociation in aqueous solution.

With respect to claim 5, Devenyns discloses at least 10% by weight of peroxyacetic acid (col. 2, lines 53-59), which encompasses the claimed limitation of 15% peroxyacetic acid, and Devenyns discloses at least 1.5% by weight of hydrogen peroxide (col. 2, lines 53-59), which encompasses the claimed limitation of 14% hydrogen peroxide. The Examiner notes that peroxyacetic acid and peracetic acid refer to the same compound. See The Condensed Chemical Dictionary, p. 786 (Hawley, Gessner, The Condensed Chemical Dictionary, Tenth Ed., Van Nostrand Reinhold Company, 1981.)

With respect to claim 6, Devenyns discloses a suspension for paper or paper board making (col. 1, line 59 – col. 2, line 15; and col. 3, lines 39-44), the suspension including an additive comprising a peracetic acid and hydrogen peroxide composition (col. 2, lines 53-65) added to a cellulose fibre stock after pulping (col. 1, lines 47-54).

With respect to claim 7, Devenyns is applied as in the rejection to claim 2, above.

With respect to claim 8, Devenyns is applied as in the rejection to claim 3, above.

With respect to claim 9, Devenyns is applied as in the rejection to claim 4, above.

With respect to claim 10, Devenyns is applied as in the rejection to claim 5, above.

With respect to claim 11, Devenyns discloses a process for preparing a suspension comprising forming a cellulose fibre pulp suspension (col. 3, lines 39-44) and adding a composition of peracetic acid and hydrogen peroxide (col. 2, lines 53-65) before any other additives are added to the suspension (col. 1, lines 47-54).

With respect to claim 12, Devenyns discloses that the pulp suspension has a consistency of at least 5%, and preferably at least 10%, but in most cases will not exceed 40%, and preferably 30% (col. 3, lines 39-44), which contains four specific points within the claimed range of at least 2% or greater of cellulose fibres.

With respect to claim 13, Devenyns discloses a concentration of at least 10% by weight of peroxyacid, which encompasses the claimed range of at least 12.5% peracetic acid, and the composition is added to the suspension in the proportion at least 0.1% and preferably at least 1% by weight of peroxyacid relative to the dry pulp (col. 3, lines 45-53), which in the absence of evidence to the contrary, the Examiner considers to encompass the claimed limitation of fifty millilitres of composition per gross tonne of cellulose fibre or dry solids in the suspension.

With respect to claim 14, Devenyns discloses adding at least 0.1% by weight of peroxyacid to the pulp, i.e., at least 1000 g/ton. Devenyns further discloses adding 240 g/L (col. 7, lines 35-37). The Examiner calculates that this is equivalent to at least four litres/tonne of peroxyacid, which, in the absence of evidence to the contrary, the Examiner considers to encompass the claimed limitation of seven litres of composition is added to 1 tonne of pulp suspension formed from cellulose fibres and water.

With respect to claim 15, Devenyns discloses a process time of between 120 minutes and approximately 360 minutes (col. 3, lines 22-23), which contains 2 specific points within the claimed range of at least 30 minutes. Since Devenyns does not disclose any further additives, the Examiner construes this period to contribute time

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between adding the composition to the pulp suspension and adding any further additives such as FWA or OBA.

With respect to claim 16, the process of Devenyns is inherently either operated in batch or continuous mode.

With respect to claim 17, Devenyns discloses that the pulp suspension is calibrated at the end of a process time to determine whether the composition has been effective against a desired brightness (col. 6, lines 1-3) and, if required, a further period of processing time allowed (col. 5, lines 16-26).

With respect to claim 19, Devenyns is applied as in the rejection to claim 4, above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Devenyns in view of Chen et al (US 2004/0149407 A1).

With respect to claim 18, Devenyns does not disclose expressly adding FWA or OBA to the pulp.

Chen et al disclose that OBA is added to the pulp suspension (p. 3, ¶0026) prior to paper or paper board forming from the pulp suspension (p. 1, ¶0010 and ¶0011).

Chen also discloses that FWA is also known as OBA (p. 3, ¶0028, lines 1-4).



At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add OBA to pulp as described by Chen et al in the peracetic acid / hydrogen peroxide-treated pulp of Devenyns to obtain the invention as specified in claim 18.

The motivation would have been to provide paper with high overall brightness (p. 1, ¶0008, lines 3-9).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Devenyns in view of Sundblad et al (EP 0 634 521 A1).

With respect to claim 20, Devenyns discloses adding 1000 g, or 1 kg, peroxyacid per ton, as discussed in the rejection to claim 14, above. This provides one specific point within the claimed range of in the order of 50 g to 7 kg of composition per gross tonne of paper in initially added. Devenyns also discloses a pre-determined process of time in which the composition is allowed to react, as discussed in the rejection to claim 15, above. Devenyns also discloses multiple bleaching stages, including a hydrogen peroxide stage (col. 5, lines 1-40). Devenyns does not disclose expressly that a second bleaching stage uses the same composition.

Sundblad et al discloses multiple bleaching stages using hydrogen peroxide (i.e., "at least one stage"; p. 2, lines 43-44) in which the hydrogen peroxide is added in combination with peracetic acid (p. 2, lines 52-55) in the range of about 1 kg/tonne to about 40 kg/tonne (p. 2, lines 56-58). This contains one specific point within the claimed range of a further 50 g to 7 kg of composition added per tonne of gross paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a hydrogen peroxide / peracetic acid combination as described by Sunblad et al in the subsequent bleaching stage of Devenyns to obtain the invention as specified in claim 20.

The motivation would have been that by selecting a suitable combination of the peracid, the inventive method enables an increase in pulp brightness in the order of 5% ISO, as compared with bleaching by means of hydrogen peroxide only (p. 2, lines 40-42); and that peracetic acid is advantageous in production and utilization, is limitedly corrosive, and the decomposition products are easily recycled to the chemical recovery (p. 3, lines 26-29).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The GB Search Report cited the following X references: WO 1997/017489 A1 shows delignification after chemical pulping using hydrogen peroxide and peracetic acid, with pulp consistency and liquor charge ranges; US 5,322,647 shows bleaching cellulose with hydrogen peroxide and peracetic acid; EP 0503303 A1 shows bleaching steps using hydrogen peroxide and peracetic acid; WO 2000/008251 A1 which shows bleaching pulp with hydrogen peroxide and peracetic acid; WO 1997/030208 A1, which shows bleaching with mixtures of hydrogen peroxide and peracids; and WO 1997/036039 A1 shows bleaching lignin-containing materials using hydrogen peroxide and/or peracetic acid. The European Search Report cited the following X references: WO 99/32710 A shows bleaching chemical pulp with peracetic

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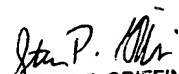
acid and hydrogen peroxide and cationic compounds; US 5,693,185 shows treating pulp with hydrogen peroxide and peracetic acid; and WO 00/77301 A shows bleaching pulp using peracetic acid and hydrogen peroxide. The Examiner applied other art to adequately reject all the claims in the instant application without using these references at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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